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NEW SPECIES OF THE NEOTROPICAL GENUS *ODONTOGRYLLUS* SAUSSURE (ORTHOPTERA: GRILLIDAE: LANDREVINAE)

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ABSTRACT

Type species of the genus *Odontogryllus* Sauss. (*O. setosus* Sauss.) described from a nymph is redescribed on the base of adult specimens possibly belonging to this species. Seven new species (*O. proximus* sp. nov., *O. morona* sp. nov., *O. rhombicus* sp. nov., *O. ucayali* sp. nov., *O. sympatricus* sp. nov., *O. nimius* sp. nov., and *O. lacandona* sp. nov.) are described from Ecuador, Peru and Mexico. Diagnostic characters and systematic position of the tribe Odontogryllini are briefly discussed.

Key words: America, Gryllidae, Landrevinae, new species, Odontogryllini, *Odontogryllus*, Orthoptera

НОВЫЕ ВИДЫ НЕОТРОПИЧЕСКОГО РОДА *ODONTOGRYLLUS* SAUSSURE (ORTHOPTERA: GRILLIDAE: LANDREVINAE)

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РЕЗЮМЕ

Типовой вид рода *Odontogryllus* Sauss. (*O. setosus* Sauss.), описанный по нимфе, переописан на основании взрослых экземпляров, возможно, принадлежащих этому виду. Описаны семь новых видов (*Odontogryllus proximus* sp. nov., *O. morona* sp. nov., *O. rhombicus* sp. nov., *O. ucayali* sp. nov., *O. sympatricus* sp. nov., *O. nimius* sp. nov. и *O. lacandona* sp. nov.) из Эквадора, Перу и Мексики. Кратко обсуждены диагностические признаки и систематическое положение трибы Odontogryllini.

Ключевые слова: Америка, Gryllidae, Landrevinae, новые виды, Odontogryllini, *Odontogryllus*, Orthoptera

INTRODUCTION

The subfamily Landrevinae was originally proposed by Saussure (1878, p. 371) as his legion “Landrevites” inside of his tribe “Grylliens” for two genera: *Landreva* Saussure, 1877, now divided into several genera (Eages et al. 2013); and *Odontogryllus* Saussure, 1877. Afterwards this legion was forgotten and in accordance with the older views by Saussure (1877), the above-mentioned genera were included

in the tribe Gryllomorphini of the subfamily Gryllinae (Chopard 1967). Gorochov (1982) restored Landrevinae as a separate subfamily.

Later Otte and Alexander (1983) independently described this taxon as a new tribe of Gryllinae, and in 1988 this tribe was transferred to the subfamily Pteroplistinae (Otte 1988). However, Gorochov showed that Pteroplistinae and Landrevinae are not related to each other: the first subfamily belongs to the Phalangopsinae subfamily group, while the sec-

ond one to the Eneopterinae subfamily group (Gorochoy 1990, 2000, 2001, 2004; Gorochoy and Warchalowska-Sliwa 2004). However for many years, the placement of the discussed group in Pteroplistinae *sensu* Otte has been followed in the Orthoptera Species File Online and has only recently been corrected: at present, the tribe Landrevini is included in the separate subfamily Landrevinae (Eades et al. 2013).

Odontogryllini was described by de Mello (1992) as a third tribe of the Pteroplistinae *sensu* Otte. De Mello correctly indicated that the tribe Odontogryllini is related to Landrevinae *sensu* Gorochoy, but he probably had no representatives of true Pteroplistinae for comparison and followed Otte (1988) in his conclusions. Gorochoy (2004) indicated that the tribe Odontogryllini does not belong to Pteroplistinae, and later (Gorochoy 2005) described a new tribe Prolandrevini within Landrevinae.

The present study of some new material of the genus *Odontogryllus* from Peru, Ecuador and Mexico confidently supports the placement of Odontogryllini in Landrevinae. This study also revealed several new species.

MATERIAL AND METHODS

All the specimens described here were collected in the forest floor of tropical rainforests by Russian collectors. This material is dry and pinned, and deposited at the Zoological Institute of the Russian Academy of Sciences, Saint Petersburg (ZIN). One specimen was loaned for a comparison from Geneva: Muséum d'Histoire naturelle de la Ville de Genève (MHNG). Photographs of selected morphological structures were produced using a digital camera Leica DFC 290 mounted on a Leica MZ 16 microscope.

SYSTEMATICS

Subfamily Landrevinae Saussure, 1878

Note. This subfamily is characterized by the general appearance more or less similar to that of the Gryllinae. However, the body of Landrevinae is usually dorsoventrally flattened and the hind tibiae bear small dorsoproximal denticles situated proximally of the true spines; such structure of hind tibiae is also characteristic for Gryllomorphinae, Itarinae, and Eurygryllodini (a primitive tribe of Gryllinae).

Sometimes, the body is almost not flattened (as in the most part of Gryllinae), strongly flattened (slightly similar to that of Pteroplistinae), with the hind tibiae having additional small denticles between the true spines (this feature is a possible symplesiomorphy, also present in Eneopterinae, Phalangopsinae, Podoscirtinae, Phaloriinae and some other subfamilies), or with the latter spines somewhat reduced (*Otteana* Gorochoy, 1990). Landrevinae differs from all these subfamilies in the following characters: from Gryllinae (including Eurygryllodini) and Itarinae in the absence of hypopharyngeal proboscis, and male genitalia with rather short endoparameres as well as with long endoparameral apodemes and without any spermatophore sack from Gryllomorphinae in the absence of hypopharyngeal proboscis; from Pteroplistinae in the male tegminal mirror lacking two or more distinct dividing veins, and a normal (thin) ovipositor; from Phalangopsinae and Phaloriinae in the same character of male tegminal mirror and/or the hind tibiae with larger true spines and very sparse denticles between them (or without these denticles); and from Phaloriinae, Eneopterinae, and Podoscirtinae in the same characters of hind tibiae and a narrow or slightly widened second segment of tarsi. *Odontogryllus* has all the characters distinguishing it from the above-mentioned subfamilies, and thus the tribe Odontogryllini must be placed in Landrevinae.

Tribe Odontogryllini de Mello, 1992

Note. Most part of the characters used by de Mello (1992) for separation Odontogryllini from Landrevini is common for many of Landrevini genera or rather variable inside this tribe, but one of them seems more or less suitable: the presence of S-shaped curvature of lateral half of stridulatory vein in Landrevini, and the absence of such curvature in Odontogryllini (it is useful to note that this vein is also devoid of any S-shaped curvature in all Pteroplistinae, as well as in majority of the other crickets). I cannot examine this character as I have no representatives of Neotropical Landrevinae with a developed tegminal stridulatory apparatus. The tribes Landrevini and Odontogryllini differ from Prolandrevini in the absence of small denticles between spines of hind tibiae and a narrow second segment of the hind tarsi (in Prolandrevini, a single denticle may be developed on almost each space between the outer spines of hind tibiae, and the second segment of all tarsi is slightly widened). Ac-

cording to de Mello (1992), *Odontogryllini* includes three Neotropical genera: *Odontogryllus*, *Valchica* de Mello, 1992, and *Brasilodontus* de Mello, 1992.

***Odontogryllus* Saussure, 1877**

Note. This genus differs from the other genera of *Odontogryllini* in the strongly shortened male tegmina lacking stridulatory apparatus, and in the absence of any tympana. Hind wings and female tegmina of *Odontogryllus* are also absent and almost absent, respectively. All these characters do not allow me to clearly separate this genus from some similar representatives of *Landrevini*, however male genitalia of the genus *Odontogryllus* are rather similar to those of *Eneopterinae* and of *Prolandrevini*. However in the most part of *Landrevini*, male genitalia are less similar to those of *Eneopterinae*, i. e. probably more deviated from the *Eneopterinae*-like genitalia of their possible common ancestor. Now *Odontogryllus* includes 11 species: *O. setosus* Saussure, 1877 from Peru (type species), *O. niger* Giglio-Tos, 1898 from Ecuador, *O. bifidus* de Mello, 1992 and *O. acutus* de Mello, 1992 from Brazil, and seven new species described below.

***Odontogryllus ?setosus* Saussure, 1877**

(Figs. 1–3, 10–18)

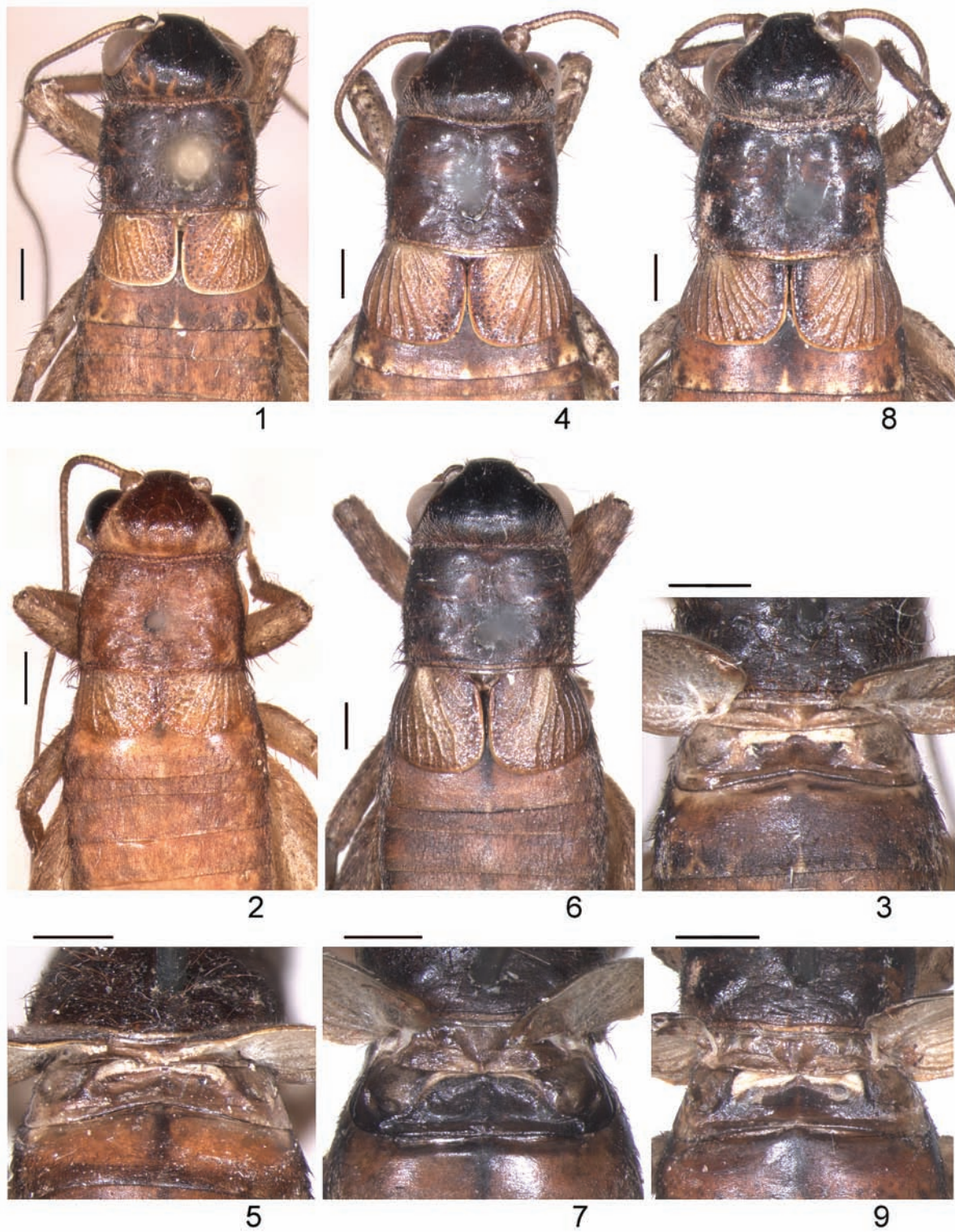
Material examined. PERU: 3 males, 6 females, Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, primary forest, at night, 26–31 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin. E. Tkatsheva, V. Izersky (ZIN). ECUADOR: 3 males, 2 females, Eastern plain, 80–85 km E of Lago Agrio Town, environs of Lago Grande (lake) on Rio Cuyabeno, very lowlying forest, at night, 2–9 November 2005, A. Gorochov, A. Ovtshinnikov (ZIN); 2 males, 1 female, same plain, 70 km SE of Lago Agrio Town, environs of S. Pablo de Kantesiya Vill. on Rio Aguarico, lowlying forest, at night, 10–17 November 2005, A. Gorochov, A. Ovtshinnikov (ZIN).

Description. Male. Coloration of dark specimens (Fig. 1) following: epicranium dark brown with lighter (brown) area between antennae under rostral apex, light brown narrow stripe along upper edge of each eye, a few brown and light brown short longitudinal stripes on hind part of vertex (sometimes only lateral stripes developed), yellowish ocelli and very

small areas around lateral ocelli as well as moderately wide stripe along lower and posterior edges of each eye (upper half of stripe along latter edge very narrow); mouthparts light brown with a few narrow whitish and yellowish stripes on clypeus, yellowish or light brown labrum, and grayish brown most part of apical segment of maxillary palpi; antennae with almost light grayish brown flagellum and slightly darker areas on scape; pronotum dark brown with reddish brown interrupted stripe along each lateral edge of disc (sometimes pronotum completely dark brown); tegmina light brown with brown and dark brown dots on medial part; legs light brown with sparse and weakly distinct brown spots on fore and middle femora, almost dark brown areas on distal part of hind femora, numerous brown oblique stripes on rest dorsal surface of hind femora as well as on proximal half of outer surface of these femora, rather dark (grayish brown) dorsal surface of all tibiae and spines of hind tibiae, and slightly lighter (intermediate between brown and light brown) rest of tibiae and areas on tarsi; abdomen with reddish brown dorsum having a few small darker spots along hind edge of first tergite, grayish brown (slightly darker than most post of abdominal dorsum) sternites and lateral parts of tergites, almost dark brown anal and genital plates, and light grayish brown cerci (sometimes dorsum of all abdominal tergites with darker spots partly fused with each other, and cerci darkish).

Coloration of light specimens (Fig. 2) light brown with brown head dorsum, yellowish or light brown rostral apex, moderately wide yellowish stripes around eyes as well as on hind part of vertex, brown lateral lobes of pronotum, darkish apical part of hind femora and lateral parts of abdominal tergites, light reddish brown most part of abdominal dorsum, and darkish anal and genital plates.

Head almost not depressed dorso-ventrally, with large eyes, with lateral ocelli almost twice larger than median ocellus, with rostrum between antennal cavities approximately 1.5 times as wide as scape, and with widely rounded outlines of rostrum in profile. Pronotum almost 1.4 times as wide as long, with somewhat oblique ventral edge of lateral lobes, and with almost straight all edges of disc (lateral and posterior edges slightly convex, anterior one slightly concave); metanotum with gland having median concavity distinctly outlined anteriorly and indistinctly outlined posteriorly (with gradual transition from concavity to posterior edge) as well as with whitish



Figs. 1–9. *Odontogryllus* Sauss., male: 1–3 – *O. setosus* Sauss.; 4, 5 – *O. proximus* sp. nov.; 6, 7 – *O. morona* sp. nov.; 8, 9 – *O. rhombicus* sp. nov. Anterior half of body from above (1, 2, 4, 6, 8); metanotum from above and slightly behind (3, 5, 7, 9). Scale bars 1 mm.

ribbon-like membranous area around anterior half of this concavity (Fig. 3). Tegmina strongly shortened, reaching of middle of first abdominal tergite, contacted with each other medially, roundly truncate posteriorly, with roundly angular posteromedial parts, with somewhat oblique longitudinal venation of dorsal field, and with traces of crossveins between them (Figs. 1, 2). Hind wings and tympana absent; legs robust, with four pairs of rather strong spines and three pairs of similar spurs on hind tibia, with 2–6 outer and 0–3 inner denticles on proximal part of this tibia, and with 5–6 pairs of distinct denticles and a pair of strong apical spurs on hind basitarsus. Anal plate almost triangular but with truncate apex; genital plate almost twice longer and with rather narrowly truncate apex; genitalia as in Figs. 10–18.

Female. General appearance as in dark males, but abdominal dorsum rather dark in all females, tegmina strongly reduced (looking as a pair of lateral scales reaching middle of visible part of mesonotum and partly covered with pronotum), and anal plate rounded at apex. Genital plate distinctly smaller than previous plate, weakly transverse, narrowing to apex, and more or less truncate posteriorly; ovipositor rather short (hind femur approximately 1.3 times as long as ovipositor).

Length (mm). Body: male 12–14, female 13–15; pronotum: male 2–2.3, female 2.2–2.5; visible part of tegmina in rest position: male 1.4–1.7, female 0.3–0.5; hind femora: male 7–7.7, female 8–8.8; hind tibiae: male 4.7–5.3, female 5.3–5.8; ovipositor 6.2–6.8.

Comparison. The light specimens of this species are very similar in the coloration to the holotype of *O. setosus*, which is a nymph of male (this specimen deposited in MHNG is studied by me). Moreover, *O. ?setosus* is rather widely distributed in Amazonia (see data in the material section), and all the other species studied by me are distinctly darker than this holotype. However, I cannot exclude that a nymphal coloration of these dark species may be also rather light. It is a reason that I interpret the above-mentioned specimens as possibly belonging to *O. setosus*. The holotype of *O. niger* is a female looking, judging by its photographs (Eades et al. 2013), very similar to the darker specimens of *O. ?setosus*, but its body is larger (length of pronotum 3 mm, length of hind femur 10 mm) and its ovipositor is clearly longer (hind femur approximately 1.1 times as long as ovipositor). From *O. bifidus* and *O. acutus* similar to *O. ?setosus* in the structure of male genitalia, the latter

species is distinguished by a more angular shape of the posteromedial part of male tegmina, more gradually curved lateroapical epiphallal lobes (in profile), more strongly curved ectoparameres (Figs. 11, 12, 14–17), and possibly the presence of distinct longitudinal venation in the dorsal field of male tegmina. From *O. bifidus*, this species differs also in a wider apical part of the epiphallal apex, and from *O. acutus*, in a more concave median part of the epiphallal apex (Figs. 10, 13, 18).

***Odontogryllus proximus* sp. nov.**

(Figs. 4, 5, 19–22)

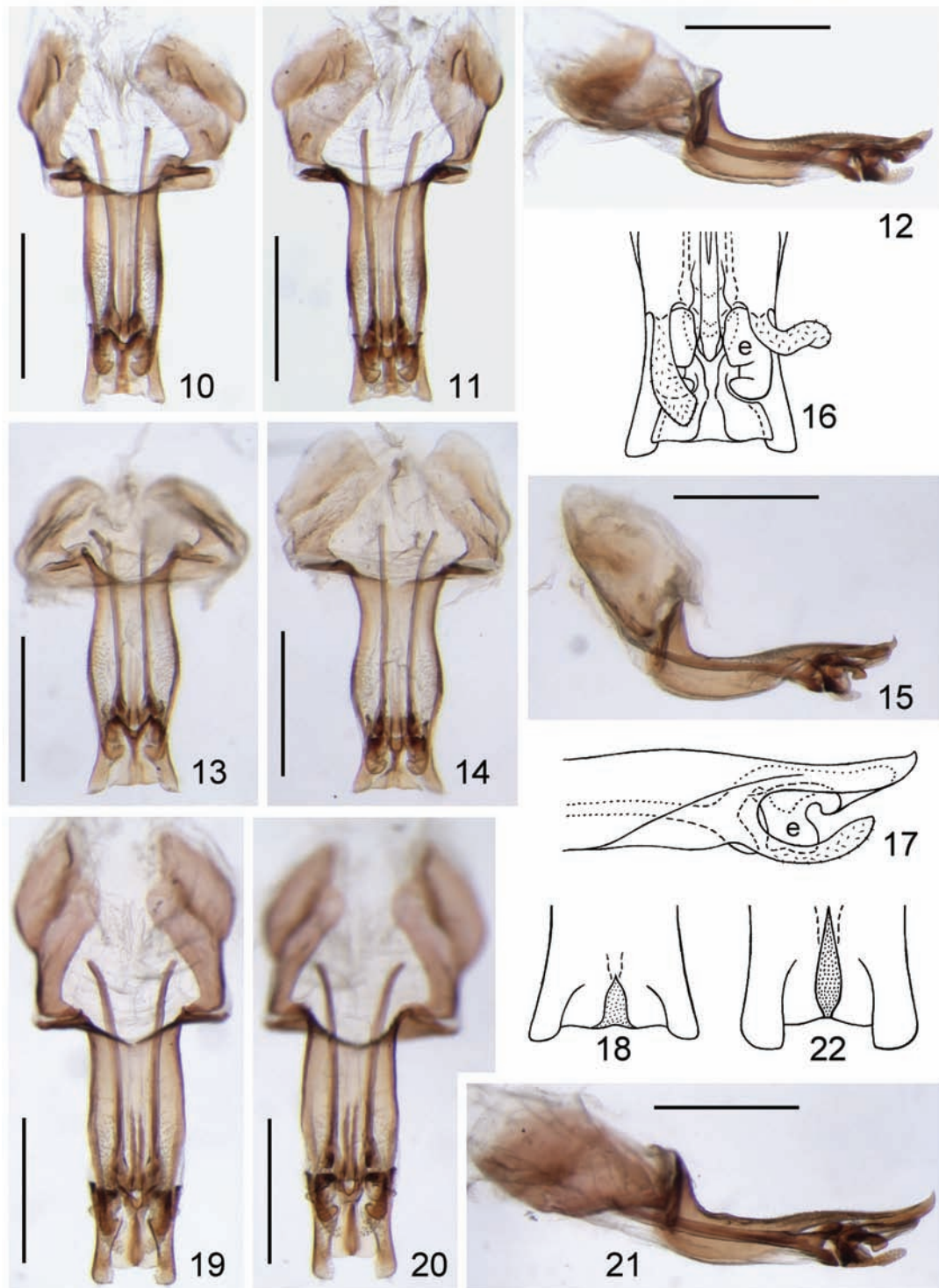
Etymology. The species name is the Latin word “*proximus*” (nearest).

Type material. Holotype – male, ECUADOR: Eastern plane, 70 km SE of Lago Agrio Town, environs of S. Pablo de Kantesiya Vill. on Rio Aguarico, lowlying forest, at night, 10–17 November 2005, A. Gorochov, A. Ovtshinnikov (ZIN). Paratypes: 1 male, 1 female, same data as for holotype (ZIN).

Description. *Male* (holotype). Coloration and external structure of body very similar to those of most dark males of *O. ?setosus*, but head dorsum and pronotum completely dark brown (almost blackish), antennae grayish brown, labrum light brown, tegmina somewhat larger (reaching posterior third of metanotum) and with dark brown band along medial edge (Fig. 4), metanotum with wider membranous area around anterior half of median concavity of gland (metanotum 2.1 times as wide as this area; Fig. 5), hind legs with five outer and one inner proximal denticles on tibia as well as with five inner and 5–6 outer dorsal denticles on basitarsus, and abdominal dorsum almost uniformly reddish brown. Genitalia also similar to those of *O. ?setosus*, however apical notch of epiphallus slightly deeper, ectoparameres somewhat shorter than space from their apices to apices of posterolateral epiphallal lobules, and semi-membranous posteromedian part of epiphallus with median sclerite longer and having much narrower apex (Figs. 19–22).

Variations. Paratype with somewhat darker (intensively grayish brown) abdominal dorsum having only a pair of large areas on first tergite slightly lighter (reddish brown), and with six outer and two inner proximal denticles of hind tibia.

Female. General appearance very similar to that of females of *O. ?setosus*, but lighter stripes on hind



Figs. 10–22. *Odontogryllus* Sauss., male: 10–18 – *O. setosus* Sauss.; 19–22 – *O. proximus* sp. nov. Genitalia from above (10, 13, 19), from below (11, 14, 20), and from side (12, 15, 21); scheme of distal part of genitalia from below (16, left ventral membranous lobule not in normal position), from side (17), and from above (18, 22; posteromedian sclerite dotted). Scale bars 1 mm. Abbreviation: *e* – ectoparamere.

part of vertex undeveloped, and ovipositor distinctly longer (hind femur equal to ovipositor in length).

Length (mm). Body: male 12.5–13.5, female 14.5; pronotum: male 2.5–2.7, female 2.6; visible part of tegmina in rest position: male 2, female 0.6; hind femora: male 8.5–9, female 9; hind tibiae: male 5.5–5.8, female 5.8; ovipositor 9.

Comparison. The new species is most similar to *O. ?setosus*, but distinguished from the latter by the slightly larger male tegmina, a clearly wider membranous area of the metanotal gland (in *O. ?setosus*, metanotum is almost 2.4 times as wide as this area), a slightly deeper apical notch of the epiphallus, somewhat shorter ectoparameres (in *O. ?setosus*, ectoparamere is slightly longer than the space between its apex and the apex of posterolateral epiphallal lobule), and a narrow apex of the median sclerite of posteromedian epiphallal part (in *O. ?setosus*, this sclerite has distinctly wider apex; for comparison see Figs. 18, 22). From *O. niger* the new species differs in the distinctly darker colouration of both head dorsum and pronotal disc (in *O. proximus*, dorsum of head dark brown and without lighter marks on hind part of vertex, while pronotal disc almost uniformly dark brown), and from all other congeners, in the same characters as *O. ?setosus*.

***Odontogryllus morona* sp. nov.**
(Figs. 6, 7, 23–28)

Etymology. The species is named after Morona River.

Type material. Holotype – male, ECUADOR: Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, at night, 5–15 January 2010, A. Gorochov (ZIN).

Description. *Male* (holotype). Coloration and external structure of body similar to those of *O. ?setosus* and *O. proximus* but distinguished by the following characters: epicranium dark brown with almost blackish dorsum and narrow light brown ring around each eye; mouthparts light brown with a pair of brown spots on clypeus and brown apical segment of maxillary palpi (however its apex yellowish); antennae brown; pronotum as in *O. proximus*; metanotum (Fig. 7) with membranous area around anterior half of median concavity of gland intermediate between those of *O. ?setosus* and *O. proximus* in width, and with posterior edge straight (this edge

slightly or hardly concave in the last two congeners); tegmina almost as in *O. proximus* but with light brown dorsal field having wider brown medial area, and with brown lateral field (Fig. 6); legs with less distinct spots, with almost uniformly brown fore and middle tibiae as well as hind tarsi and most part of hind femora, with dark brown hind tibiae having six outer and 1–2 inner proximal denticles, and with six pairs of dorsal denticles on hind basitarsus; abdomen brown with slightly darker median stripe of first tergite, lateral parts of all tergites, and anal and genital plates, as well as with almost light brown most part of cerci. Genitalia also similar to those of these species, but apex of epiphallus slightly narrower than in *O. proximus* and with median notch somewhat deeper than in *O. ?setosus*, ectoparameres almost equal to space between their apex and apex of posterolateral epiphallal lobules in length, distal part of ectoparameres less hooked, and median sclerite of semimembranous posteromedian part of epiphallus narrow (middle part of this sclerite clearly narrower than in *O. proximus*, and its distal part distinctly narrower than in *O. ?setosus*; Figs. 23–28).

Female unknown.

Length (mm). Body 13.5; pronotum 2.5; visible part of tegmina in rest position 2; hind femora 8.3; hind tibiae 5.4.

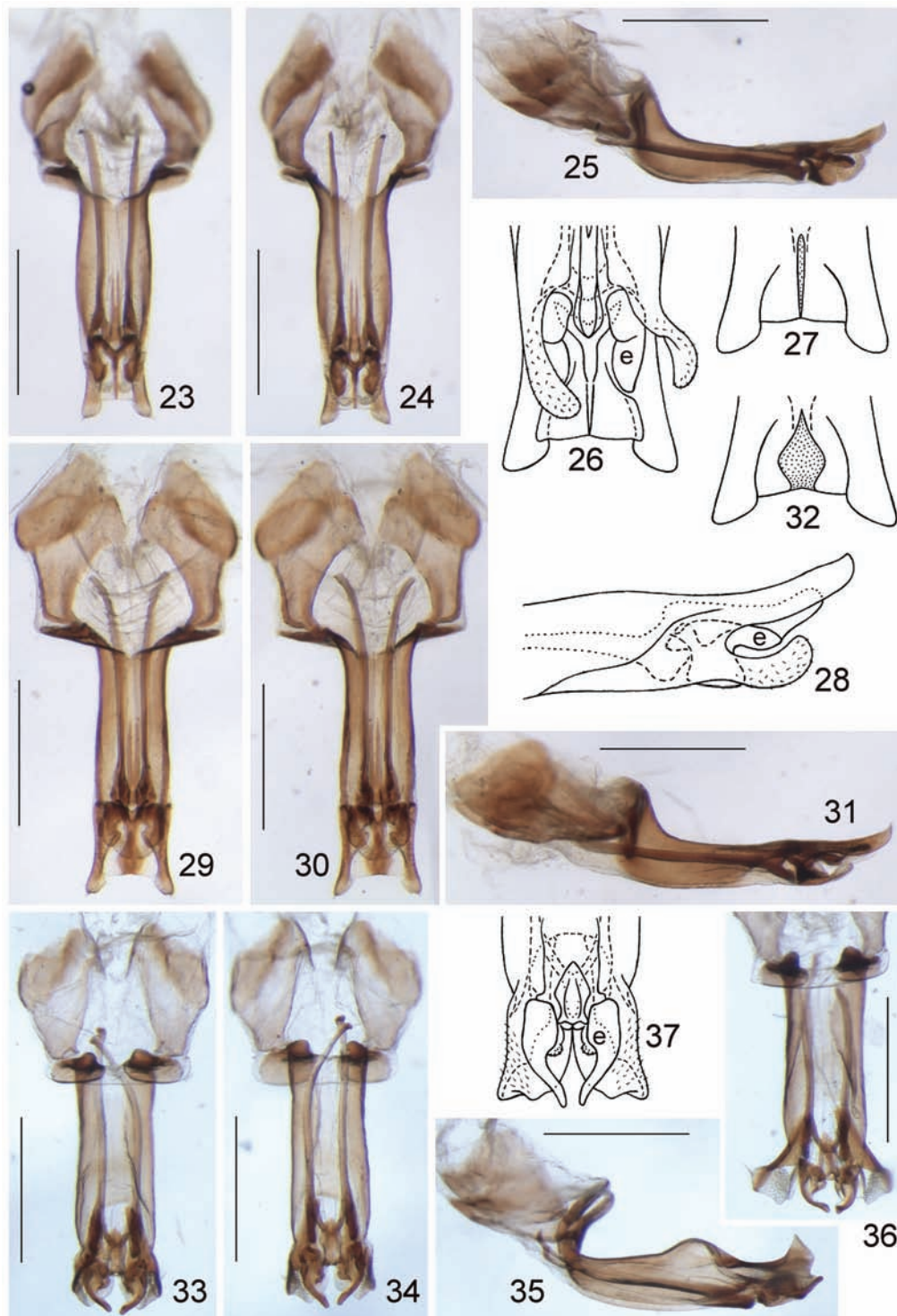
Comparison. The new species is distinguished from *O. ?setosus* and *O. proximus* by the characters of male genitalia listed above. From *O. niger* it differs in the same characters as *O. proximus* and somewhat smaller body, and from all the other congeners in the same characters as *O. ?setosus*.

***Odontogryllus rhombicus* sp. nov.**
(Figs. 8, 9, 29–32)

Etymology. The species name is the Latin word “*rhombicus*” (rhomboidal) characterizing a shape of the median sclerite of epiphallal apex in male genitalia.

Type material. Holotype – male, ECUADOR: Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, at night, 5–15 January 2010, A. Gorochov (ZIN). Paratypes: 3 females, same data as for holotype (ZIN).

Description. *Male* (holotype). Coloration and external structure of body very similar to those of *O. morona*, however epicranium slightly lighter near



Figs. 23–37. *Odontogryllus* Sauss., male: 23–28 – *O. morona* sp. nov.; 29–32 – *O. rhombicus* sp. nov.; 33–37 – *O. ucayali* sp. nov. Genitalia from above (23, 29, 33), from below (24, 30, 34), and from side (25, 31, 35); scheme of distal part of genitalia from below (26, left ventral membranous lobule not in normal position; 37), from above (27, 32; posteromedian sclerite dotted), and from side (28); distal half of genitalia in erected position from above (36). Scale bars 1 mm. Abbreviation: e – ectoparamere.

clypeal suture and light brown under eyes, pronotum with a few lighter marks along lateral edges of disc, metanotum practically indistinguishable from that of *O. proximus* (Fig. 9), tegmina almost as in *O. ?setosus* but with longitudinal veins of dorsal tegminal field more distinct and somewhat more numerous than in all known congeners with male described (Fig. 8), hind femur with more distinct oblique stripes, hind tibia with 3–4 outer and 0–1 inner proximal denticles, hind basitarsus with five pairs of dorsal denticles, abdominal dorsum slightly lighter (reddish brown), and genital plate and cerci darker (dark brown and grayish brown, respectively). Genitalia very similar to those of *O. proximus*, however median sclerite of semimembranous posteromedian part of epiphallus distinctly wider in apical part and much wider in middle part (almost rhomboidal dorsally; Figs. 29–32).

Female. General appearance as in female of *O. proximus*, however coloration of epicranium almost as in male but with hardly darker lower parts, and ovipositor slightly longer than hind femur.

Length (mm). Body: male 14.5, female 14–16; pronotum: male 2.6, female 2.5–2.8; visible part of tegmina in rest position: male 1.7, female 0.1–0.3; hind femora: male 9.3, female 9–10; hind tibiae: male 6, female 5.8–6.4; ovipositor 10–11.

Comparison. The new species differs from *O. ?setosus*, *O. proximus*, and *O. morona* in the rhomboidal shape of the median sclerite of posteromedian epiphallus. From *O. niger* the new species is distinguished by the same characters as *O. proximus* and a somewhat longer ovipositor (in *O. rhombicus*, it is slightly longer than hind femur, but in *O. niger*, slightly shorter than this femur), and from all the other congeners in the same characters as *O. ?setosus*.

***Odontogryllus ucayali* sp. nov.**

(Figs. 33–37, 51, 52)

Etymology. The species is named after Ucayali River.

Type material. Holotype – male, PERU: Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, primary forest, at night, 26–31 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin. E. Tkatsheva, V. Izersky (ZIN). Paratypes: 7 males, 2 females, same data as for holotype (ZIN).

Description. *Male* (holotype). Body slightly smaller than in all species considered above. Coloration light brown with following marks: dorsum of epicranium dark brown with brown and light brown marks on hind part of vertex and behind eyes, light brown stripe around upper part of each eye, and short yellow stripes along both lateral edges of rostrum; face of epicranium and genae with brown angular transverse stripe on rostral apex (reaching median ocellus) as well as with slightly darkened areas under antennal cavities and behind eyes; antennae grayish brown with slightly lighter areas on scapes; two apical segments of maxillary palpi somewhat darkened; pronotum dark brown with a few reddish brown spots along lateral edges of disc; tegmina with rather small brown posteromedial area (Fig. 51); legs with small darkish spots on fore and middle femora, grayish brown distal part of hind femora, numerous darkish oblique stripes on rest of latter femora, brown fore and middle tibiae and tarsi, dark brown hind tibiae having lighter areas on spines, and partly brown hind tarsi; abdomen with numerous brown dots on dorsum of first tergite, brown lateral parts of all tergites, almost grayish brown sternites and genital plate, and slightly darkened cerci and a few marks on anal plate. Structure of body similar to that of *O. ?setosus*, but metanotum with median concavity of gland clearly deeper than in all previous species (posterior edge of this concavity almost keel-like) and without membranous area around anterior half of this concavity (Fig. 52), tegmina almost reaching posterior edge of first abdominal tergite and with more or less parallel longitudinal veins (these veins very distinct, and traces of crossveins between them absent), posterior edges of tegmina widely rounded and with almost obliquely truncate posteromedial corners (Fig. 51), hind tibia with 4–5 outer and two inner proximal denticles, and hind basitarsus with six outer and five inner dorsal denticles. Genitalia more or less similar to those of previous congeners in general shape of epiphallus but very different from them by presence of large subdistal convexity on dorsal surface of epiphallus, much higher posterolateral epiphallus lobules having characteristic dorsal angular projection (see in profile), distinctly deeper posteromedian epiphallus notch, and much longer ectoparameres having thin apical part somewhat curved upwards and medially (Figs. 33–37).

Variations. Some males lighter: with slightly wider light brown stripes around eyes, with light

brown scape and pedicel as well as fore and middle tibiae and tarsi, with yellowish tegmina (but having darkish posteromedial spots), with grayish brown hind tibiae, and with almost uniformly light grayish brown abdomen.

Female. General appearance as in light males, however pronotum with more or less brown disc and larger light spots along lateral edges of disc (these spots partly fused with each other), pterothoracic dorsum and abdomen light brown with numerous darkish dots and small spots as well as with darkish lateral parts of abdominal tergites, and hind tibiae and tarsi light grayish brown. Structure of body similar to that of female of *O. ?setosus*, but tegmina invisible, and ovipositor somewhat shorter (hind femur approximately 1.4 times as long as ovipositor).

Length (mm). Body: male 11–12.5, female 11.5–13; pronotum: male 1.8–2, female 2–2.1; visible part of tegmina in rest position: male 1.8–2, female 0; hind femora: male 6.8–7.4, female 7.3–8; hind tibiae: male 4.4–4.8, female 4.8–5.3; ovipositor 5.2–5.6.

Comparison. The new species clearly differs from all the other congeners in the following combination of features: body rather small; male metanotal gland with a deep median concavity and without any membranous ribbon near this concavity; male tegmina with distinct parallel longitudinal veins and obliquely truncate posteromedial corners; male genitalia very characteristic (see above); ovipositor short.

***Odontogryllus sympatricus* sp. nov.**
(Figs. 38–45, 53, 54)

Etymology. The species name is “sympatric” in Latin, as this species was collected in the same locality as *O. ucayali*.

Type material. Holotype – male, PERU: Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, primary forest, at night, 26–31 October 2008, A. Gorochoy, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky (ZIN). Paratype – male, same data as for holotype (ZIN).

Description. *Male* (holotype). General appearance more or less similar to that of holotype of *O. ucayali* however with following differences: body slightly larger; dorsum of epicranium dark brown from median ocellus to hind edge of vertex but with brown and light brown short longitudinal stripes on hind part of vertex; face of epicranium with light brown triangular area near clypeal suture and spaces

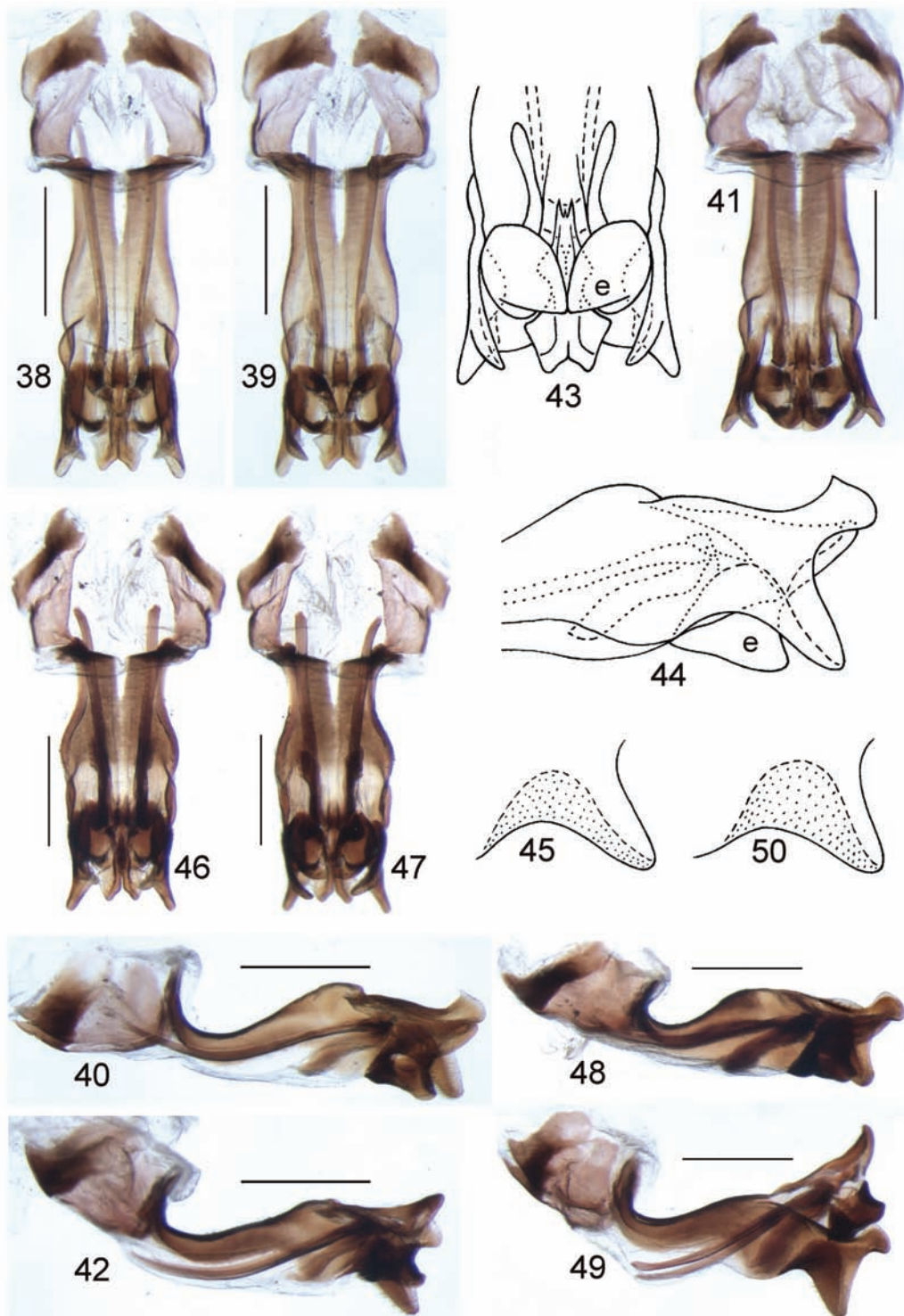
under eyes; rest of epicranium brown (including narrow stripe around upper part of each eye) with yellowish stripe along posteroventral edge of each eye; mouthparts light brown with yellowish labrum and three apical segments of maxillary palpi from partly darkish to grayish brown; antennae light brown with somewhat darker marks on scape; pronotum dark brown with hardly lighter (intensively brown) disc and reddish brown spots along lateral edges of disc; metanotum with wide but clearly less deep median concavity of gland and with moderately sparse (usual for this genus) hairs of gland as well as with membranous ribbon-like area around anterior half of above-mentioned concavity (Fig. 54); tegmina somewhat shorter (reaching distal third of first abdominal tergite) and with small angular projection on distal part of medial edge (Fig. 53); first abdominal tergite with less spotted dorsum; lateral parts of abdominal tergites almost of same color as their dorsal parts; anal plate almost light brown but with dark brown lateral parts; its apex widely rounded. Genitalia large and slightly similar to those of *O. ucayali* in presence of distinct convexity on epiphallic dorsum, but distal 2/3 of epiphallus more widened, with posteromedian part having rather long and bifurcate median projection, and with two pairs of posterolateral lobules very different in shape (Figs. 38–42); some of these lobules (a pair of posteroventral lobules) with characteristic inner areas more strongly sclerotized than their outer surfaces (Fig. 45); ectoparameres short, thick, and without distinct hook-like curvature (Figs. 43, 44).

Variations. Other male with a pair of short yellow stripes near median ocellus along lateral edges of rostrum, with narrow light brown stripe around upper part of each eye, with yellowish clypeus, and with less distinct dark marks on anal plate.

Female unknown.

Length (mm). Body 13.5–14; pronotum 2.1–2.2; visible part of tegmina in rest position 1.7–1.9; hind femora 7.6–8; hind tibiae 4.9–5.2.

Comparison. The new species is clearly distinguished from *O. ucayali* by the above-mentioned characters of epiphallus as well as by short and thick ectoparameres. From *O. niger* it differs in a slightly smaller body as well as distinctly darker pronotal disc and hind part of vertex (from dark brown to intensively brown, but not clearly lighter than dark brown lateral lobes of pronotum). And from all the other congeners, *O. sympatricus* differs in the distinctly wider and deeply notched distal half of epiphallus.



Figs. 38–50. *Odontogryllus* Sauss., male: 38–45 – *O. sympatricus* sp. nov.; 46–50 – *O. nimius* sp. nov. Genitalia from above (38; 41, in partly erected position; 46), from below (39, 47), and from side (40; 42, in partly erected position; 48; 49, in erected position); scheme of distal part of genitalia from below (43) and from side (44); scheme of left posteroventral epiphallal lobule and of nearest epiphallal part from side (45, 50; inner sclerotized area dotted). Scale bars 1 mm. Abbreviation: *e* – ectoparamere.

***Odontogryllus nimius* sp. nov.**

(Figs. 46–50, 55, 56)

Etymology. The species name is the Latin word “*nimius*” (excessive). This name is given in connection with a very wide epiphallus, wider than in all the other congeners.

Type material. Holotype – male, PERU: Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., ~1200 m, partly primary/partly secondary forest, at night, 20–23 October 2008, A. Gorochoy, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky (ZIN). Paratypes: 7 males, 3 females, same data as for holotype (ZIN).

Description. *Male* (holotype). General appearance very similar to that of paratype of *O. sympatricus* (Figs. 55, 56), but short yellow stripes along lateral edges of rostrum connected with each other by light brown transverse stripe (this stripe located under median ocellus and contacting with it), clypeus light brown, labial palpi with darkened distal part of apical segment, antennae grayish brown with slightly lighter areas on scapes, dorsum of first abdominal tergite with several brown spots along posterior edge, genital plate and lateral parts of abdominal tergites brown (somewhat darker than dorsal parts of these tergites), anal plate brownish grey with dark brown distal part, apex of this plate roundly truncate. Genitalia also similar to those of *O. sympatricus*, however with following differences (Figs. 46–50): epiphallus clearly shorter, with distal 3/4 (not 2/3) distinctly widened, with membranous areas between bases of posterodorsal lobules somewhat longer, and with posteroventral lobules having inner sclerotized areas clearly wider in basal half (Fig. 50); endoparameral apodemes shorter (Figs. 46, 47, 49).

Variations. Sometimes coloration distinctly lighter: light stripes under median ocellus, along lateral edges of rostrum and around upper part of eyes (fused with each other) somewhat wider, yellowish; antennae light grayish brown with slightly lighter scape and pedicel; rest of head light brown with brown areas behind eyes, yellowish clypeus, and darkish areas only on apical segments of both pairs of palpi; pronotal disc light brown with yellowish lateral parts; most part of tegmina yellowish; other parts of body light brown with sparse darkish marks on fore and middle femora, hardly darker both distal part of hind femora and dorsal surface of hind tibiae, and a few slight darkish marks on anal plate.

Female. Coloration as in dark males, but apical part of hind femora and most part of hind tibiae dark brown, abdominal dorsum darker (with numerous brown spots and almost dark brown anal plate), and sometimes light stripes on rostrum almost brown as well as darker area on frontal part of rostrum almost dark brown. Structure of body similar to that of other females described here, but ovipositor approximately as in *O. rhombicus*, i. e. slightly longer than hind femur.

Length (mm). Body: male 12–15, female 11.5–16; pronotum: male 1.9–2.4, female 2.1–2.7; visible part of tegmina in rest position: male 1.6–2, female 0.2–0.5; hind femora: male 6.5–8.5, female 7.7–10; hind tibiae: male 4.5–5.8, female 5–6.5; ovipositor 8.3–11.5.

Comparison. The new species differs from the most related species *O. sympatricus* in the characters of male genitalia listed above, and from all the other congeners in the same characters as *O. sympatricus* and the ovipositor almost as in *O. rhombicus* (i.e. slightly longer than hind femur).

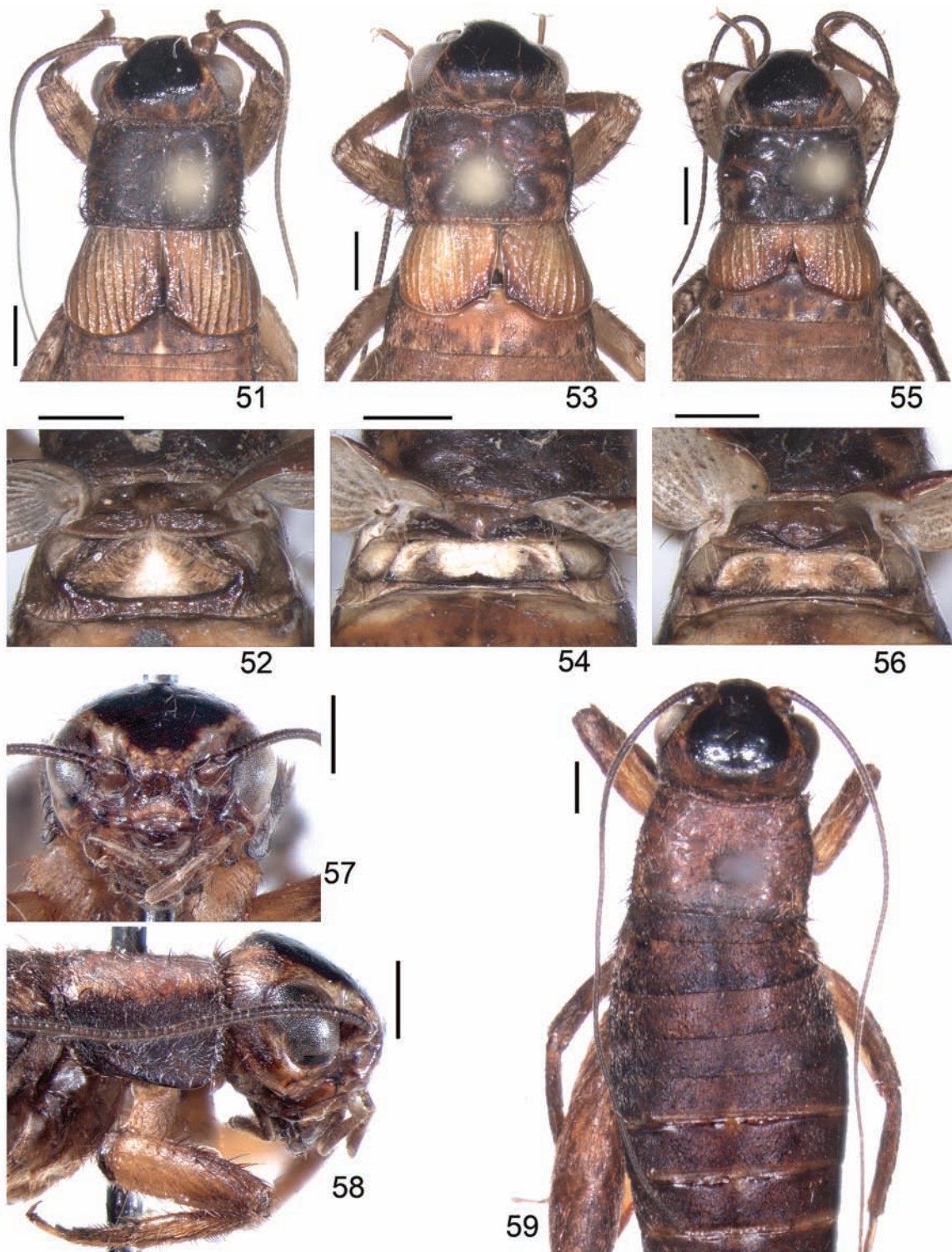
***Odontogryllus lacandona* sp. nov.**

(Figs. 57–59)

Etymology. The species is named after its type locality, Selva Lacandona.

Type material. Holotype – female, MEXICO: Chiapas State, Ocosingo Distr. near border with Guatemala, between Montes Azules Biosphere Reserve and Bonampak Natural Monument, Selva Lacandona in environs of Lacanja-Chansayab Vill., primary forest, at night, 20–27 May 2007, M. Berezin, E. Tkatsheva (ZIN).

Description. *Female* (holotype). Coloration brown with following lighter and darker marks (Figs. 57–59): head dorsum dark brown with light brown transverse stripe under median ocellus (contacting with it) fused with a pair of light brown lateral bands running along dorsal edges of antennal cavities and of eyes to posterolateral edges of vertex; lower part of epicranium with low light brown median spot near clypeus (this spot almost 0.5 times as high as darker rostral area above it) and light brown areas under eyes; visible part of mandibles also light brown; ventral half of labrum almost dark brown; antennal flagellum dark brown; other mouthparts including palpi grayish brown (maxillary palpi uniformly colored, slightly lighter than labrum); pronotum brown with reddish tinge and dark brown lateral lobes;



Figs. 51–59. *Odontogryllus* Sauss.: 51, 52 – *O. ucayali* sp. nov., male; 53, 54 – *O. sympatricus* sp. nov., male; 55, 56 – *O. nimius* sp. nov., male; 57–59 – *O. lacandona* sp. nov., female. Anterior half of body from above (51, 53, 55, 59); metanotum from above and slightly behind (52, 54, 56); head in front (57); head with pronotum from side (58). Scale bars 1 mm.

pterothoracic and abdominal tergites uniformly dark brown (hardly lighter than most part of head dorsum and lateral pronotal lobes); legs with slightly lighter (almost light brown) most part of coxae and proximal half of femora as well as with dark brown hind tibia and small areas on apical part of hind femur; sternites of thorax and of anterior half of abdomen almost light brown. Structure of body similar to that of *O. ?setosus* and of other congeners but with following differences: hind tibia slightly shorter (hind femur 1.7 times as long as hind tibia), with four outer and three inner spines (in previous congeners, hind tibia with four pairs of spines), and with five outer and one inner small denticles before spines; hind basitarsus with five outer and three inner dorsal denticles; ovipositor slightly shorter than hind femora (hind femur approximately 1.1 times as long as ovipositor, i.e. almost as in *O. niger*, *O. bifidus* and *O. acutus*).

Male unknown.

Length (mm). Body 14; pronotum 2.1; visible part of tegmina 0–0.25; hind femora 8; hind tibiae 4.7; ovipositor 7.5.

Comparison. The new species is distinguished from the other congeners by the following characters: from *O. ?setosus*, by the brown area under median ocellus larger (this area is approximately twice as high as light median spot on epicranium near clypeus, reaching ventral edge of antennal cavities; *vs.* this brown area is almost equal to this light spot in height, reaching middle part of antennal cavities), clypeus and labrum distinctly darker, maxillary palpi uniformly grayish brown, most part of abdominal tergites dark brown (slightly darker than pronotal disc and not spotted), hind tibiae slightly shorter (hind femur in *O. ?setosus* and in all other congeners studied is 1.4–1.55 times as long as hind tibia), and ovipositor clearly longer; from *O. niger*, by a smaller body and darker (dark brown, but not reddish brown) most part of head dorsum and of abdominal tergites; from *O. bifidus*, by distinctly darker abdominal tergites and slightly shorter hind tibiae; from *O. acutus*, by a clearly lighter (not almost black) pronotal disc and the same character of hind tibiae as from *O. bifidus*; from *O. proximus*, by a somewhat smaller body, the presence of larger light lateral marks on vertex (including its hind part), pronotal disc somewhat lighter than lateral pronotal lobes, absence of traces of spotted coloration on the abdominal dorsum, the same characters of hind tibiae as from some of the above-mentioned congeners, and a slightly shorter

ovipositor; from *O. morona*, by the same characters of head, pronotum and hind tibiae as from *O. proximus*, and the abdominal tergites somewhat darker (dark brown); from *O. rhombicus*, by the same characters as from *O. proximus*; from *O. ucayali*, by a uniformly brown (not spotted) pronotal disc, distinctly darker most part of abdominal tergites, slightly shorter hind tibiae, and distinctly longer ovipositor; from *O. sympatricus*, by the pronotal disc clearly lighter than pronotal lateral lobes, darker abdominal tergites, and slightly shorter hind tibiae; and from *O. nimius*, by the most part of abdominal tergites darker and not spotted, as well as slightly shorter hind tibiae and ovipositor.

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REFERENCES

- Chopard L. 1967.** Gryllides. *Orthopterorum Catalogus*, **10**. Uitgeverij Dr. W. Junk's-Gravenhage. 211 p.
- Eades D.C., Otte D., Cigliano M.M. and Braun H. 2013.** *Orthoptera Species File Online*. Visited May 27, 2013. Available from: <<http://osf2.orthoptera.org/HomePage.aspx>>
- Gorochov A.V. 1982.** A new cricket subfamily (Orthoptera, Gryllidae) from Indo-Malayan region. In: L.N. Medvedev (Ed.). *Zhivotnyj mir Vietnam* [Animals of Vietnam]. Nauka, Moscow: 147–151. [In Russian]
- Gorochov A.V. 1990.** New and little known crickets (Orthoptera, Gryllidae) from Vietnam and some other territories. *Trudy Zoologicheskogo instituta Akademii Nauk SSSR (Proceedings of the Zoological Institute, USSR Academy of Sciences)*, **209**: 3–28. [In Russian]
- Gorochov A.V. 2000.** New and little known Landrevinae (Orthoptera: Gryllidae). *Zoosystematica Rossica*, 1999, **8**(2): 267–280.
- Gorochov A.V. 2001.** Preliminary notes on the history of South American Ensifera (Orthoptera). *Acta Geologica Leopoldensia*, **24**(52/53): 81–86.
- Gorochov A.V. 2004.** Review of the subfamily Pteroplisinae (Orthoptera Gryllidae). *Memorie della Società entomologica italiana*, 2003, **82**(2): 379–396.

- Gorochov A.V. 2005.** New and little known crickets of the subfamilies Phaloriinae, Phalangopsinae and Landrevinae (Orthoptera, Gryllidae) from Indonesia and South Africa. *Trudy REO (Proceedings of the Russian Entomological Society)*, **76**: 25–46. [In Russian]
- Gorochov A.V. and Warchalowska-Sliwa E. 2004.** On some morphological and karyological problems of the generic classification of Landrevinae (Orthoptera, Gryllidae) with descriptions of two new species. *Journal of Orthoptera Research*, **13**(1): 149–154.
- Mello F. de A.G. 1992.** Five new Brazilian crickets and a new tribe for the Neotropical members of the subfamily Pteroplistinae (Orthoptera: Gryllidae: Pteroplistinae: Odontogryllini). *Transactions of the American Entomological Society*, **118**(1): 147–158.
- Otte D. 1988.** Bark crickets of the Western Pacific region (Gryllidae: Pteroplistinae). *Proceedings of the Academy of Natural Sciences of Philadelphia*, **140**(2): 281–334.
- Otte D. and Alexander D. 1983.** The Australian crickets (Orthoptera: Gryllidae). *Academy of Natural Sciences of Philadelphia, monograph*, **22**. Allen Press, Inc., Lawrence, Kansas. 477 p.
- Saussure H. 1877.** Gryllides. *Mémoires de la Société de Physique et d'Histoire naturelle de Genève*, **25**(1): 1–352.
- Saussure H. 1878.** Gryllides. *Mémoires de la Société de Physique et d'Histoire naturelle de Genève*, **25**(2): 369–696.

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